

# NORTHWOODS JOURNAL – FEBRUARY 2023

*A Free Publication about Enjoying and Protecting Marinette County's Outdoor Life*

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## Return of the Popular Master Gardeners' Conference!

<https://www.facebook.com/pages/category/non-profit/Northern-Lights-Master-Gardeners-Association-Volunteers-NLMGA-128084290595975/>



After a 3-year hiatus due to COVID, the Northern Lights Master Gardeners, Inc. (NLMGAI) will hold the much-anticipated Garden Conference at the UW-Green Bay Marinette campus on Saturday, March 18, from 8am-3:45pm. The cost is \$40 and includes morning refreshments, four educational sessions, and lunch. Some sessions may be subject to additional materials fees.



Making garden mosaic stones at a past conference; below, making a hanging succulent terrarium



Session topics available this year include container gardening, foraging, creating wildlife habitat, fermentation, climate issues, native plants, seed-saving, straw bale and survival gardening, irises, raised beds, beekeeping, pollinators, mushrooms, house plant care, pruning fruit trees, cordials, air plant gardens, and more.



Educational displays and information

Pre-registration is required and is accepted on a first-come, first-serve basis. Visit the Extension

office at the Marinette County Resource Building at 1925 Ella Court in Marinette (across from the Mariner Theater) from 8a-4:30p, M-F for a brochure. Call 715-732-7510 (Extension office) for more information.

Complete the registration form and send with payment by March 6 to Garden Conference, c/o Extension – Marinette County, 1926 Hall Ave., Marinette WI 54143. Make checks payable to "NLMGAI."

NLMGAI is an Association of garden volunteers who enjoy meeting, learning and passing on that learning to others. They meet monthly on the second Thursday of each month (varied locations). It was established in 1991 to pass along research-based gardening information to the public in cooperation with UW-Extension.

Membership is currently \$20 per year and includes a monthly newsletter. Northern Lights is open to anyone with an interest in gardening or horticulture regardless of your skill level. Whether you are a seasoned gardener or have never planted a seed you are welcome to join. *Being a certified master gardener is not a requirement.*



Annual events include the spring & fall plant sale (below), the conference, educational events & presentations throughout the County, the bi-annual Garden Walk, and more. Members also maintain the Harmony Display and Demonstration Gardens (above), a 3-acre area which is part of the Harmony Arboretum, 7 miles west of Marinette WI on Hwy 64, then 1/2 mile south on County E. Harmony Arboretum is open to the public year-round.

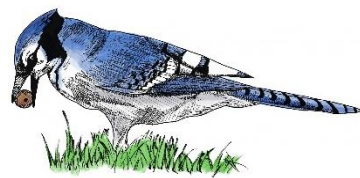


*Happy Valentine's Day!*



## Join in the Great Backyard Bird Count (GBBC), Feb. 17-20!

<https://www.birdcount.org> & [www.audubon.org/conservation/about-great-backyard-bird-count](http://www.audubon.org/conservation/about-great-backyard-bird-count)



Each February, for four days, the world comes together for the love of birds. Over these four days we invite people to spend time in their favorite places watching and counting as many birds as they can find and reporting them to us. These observations help scientists better understand global bird populations before one of their annual migrations. **The 26th annual GBBC will be held February 17 through February 20, 2023.**

The Great Backyard Bird Count (GBBC) is a free, fun, and easy event that engages bird watchers of all ages in counting birds to create a real-time snapshot of bird populations. Participants are asked to count birds for as little as 15 minutes (or as long as they wish) on one or more days of the four-day event and report their sightings online at [birdcount.org](http://birdcount.org).

Anyone can take part in the Great Backyard Bird Count, from beginning bird watchers to experts, and you can participate from your backyard, or anywhere in the world.

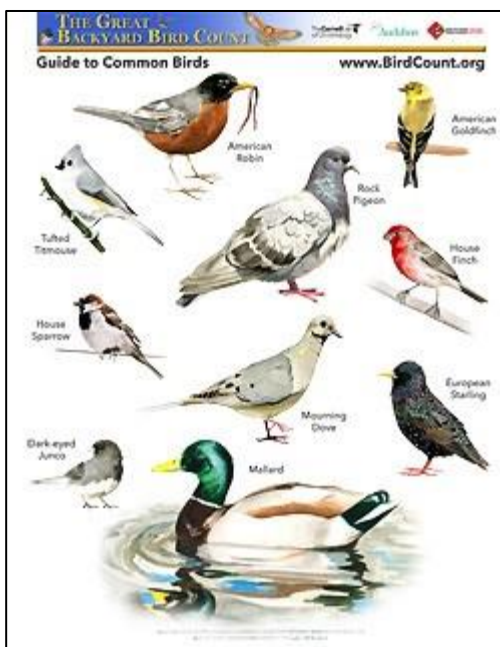


Launched in 1998 by the Cornell Lab of Ornithology and National Audubon Society, the Great Backyard Bird Count (GBBC) was the first online citizen science project, also referred to as community science, to collect data on wild birds and to display results in near real time. Birds Canada joined the project in 2009 to provide an expanded capacity to support participation in Canada. In 2013, we became a global project when we began entering data into eBird (<https://ebird.org/home>), the world's largest biodiversity-related citizen science (community science) project.

Each checklist submitted during the GBBC helps researchers at the Cornell Lab of Ornithology and the National Audubon Society learn more about how birds are doing, and how to protect them and the environment we share. Recently, more than 160,000 participants submitted their bird observations online, creating the largest instantaneous snapshot of global bird populations ever recorded.

At [www.birdcount.org/](http://www.birdcount.org/), participants can explore real-time maps and charts that show what others are reporting during and after the count. To get an idea of what you can expect to see in your area during the next GBBC, go to <https://ebird.org/explore>.

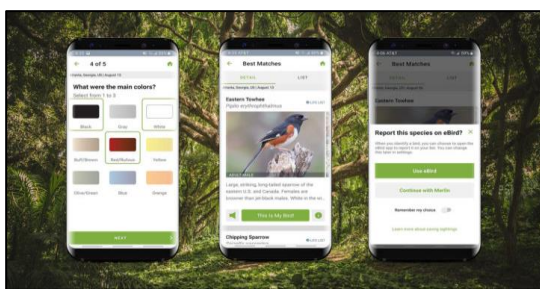
The Great Backyard Bird Count is an inter-organizational effort between the Cornell Lab of Ornithology, National Audubon Society, and Birds Canada. We work together to bring the joys of bird watching to our members.



### How to Participate

Participating is easy, fun to do alone, or with others, and can be done anywhere you find birds. Choose the easiest way for you to share your birds:

- Identify birds with Merlin Bird ID app and add sightings to your list
- Use the eBird Mobile app
- Enter your bird list on the eBird website (Desktop/laptop)



All you need is a free Cornell Lab account to participate. This account is shared with Merlin, eBird, Project FeederWatch and other projects at the Cornell Lab of Ornithology. (If you already have an account, please use the same username and password for submitting your bird list for the Great Backyard Bird Count.)

We recommend observing birds for at least fifteen minutes. See this webpage for more detailed counting instructions: <https://www.birdcount.org/tools/counting-instructions/>. Submit one or more lists over the four days of counting and you become a contributing citizen scientist (community scientist). All eBird entries and saved Merlin Bird IDs over the four days contribute to the Great Backyard Bird Count.



*"We all need an incentive to get outside mid-winter and look for birds beyond what we can see from our windows. It's fun to see the little flashes of light on the map when we submit our counts, among the thousands around the world, and we know our data matter."* — Barb Gorges, Wyoming, United States



### Birdwatching in Marinette County

Looking for spots to explore and watch birds/wildlife in the County? Here are some suggestions!

- Bloch Oxbow State Natural Area, Peshtigo - <https://dnr.wisconsin.gov/>
- Governor Thompson State Park, Crivitz - <https://dnr.wisconsin.gov/topic/parks/govthompson>
- Seagull Bar State Natural Area, Marinette - <https://dnr.wi.gov/topic/Lands/naturalareas/index.asp?SNA=37>
- Green Bay West Shores Wildlife Area & Peshtigo Harbor Unit (below) - <https://dnr.wisconsin.gov/topic/Lands/GBWS/index.html> & <https://dnr.wisconsin.gov/topic/Lands/GBWS/peshtigoharbor.html>
- Harmony Arboretum & Demonstration Gardens, N3890 County Rd. E, Peshtigo - <https://www.marinettecounty.com/departments/land-information/environmental-education/harmony-arboretum/>



Marinette County parks and village/town parks are other good places to explore too. Here is another list of good birdwatching areas in Northeastern Wisconsin from the Northeastern Wisconsin Audubon Society - <https://newiaudubon.org/important-bird-areas>. It includes areas in surrounding counties.



American Bittern





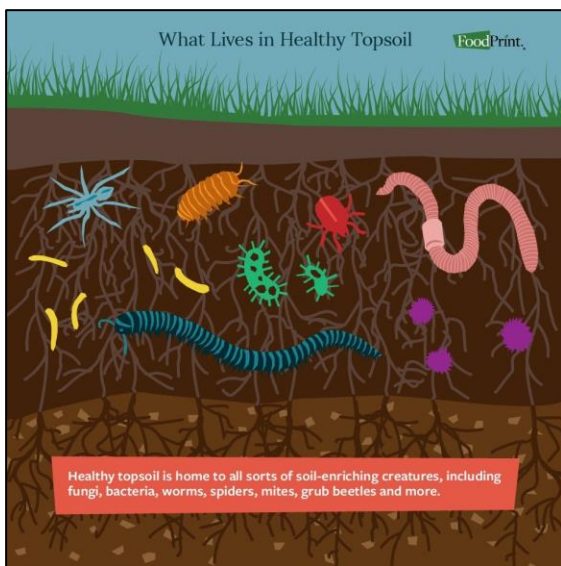
## Healthy Plants Start with Healthy Soils

Excerpts from <https://www.morningagclips.com/healthy-plants-start-with-healthy-soil/>

The winter months are a great time for gardeners to start catching up on projects they have postponed or to begin planning crop rotations and ordering seeds for the upcoming year. One of the most critical steps to ensuring a productive growing season is to test and prepare the soil, as it will be the foundation that your plants — and success — depend upon.

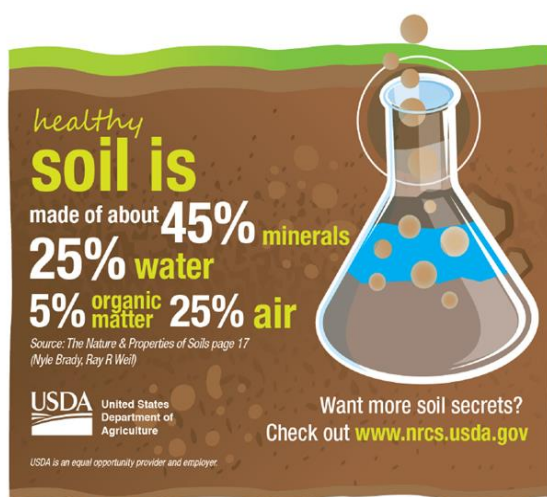
### Soil is alive

Soil is a bustling ecosystem — a large community of living organisms linked together through nutrient cycles and energy flows. *Every teaspoon of soil is home to billions of microorganisms.*



First, macro-organisms, like worms and insects, chew and shred larger organic matter into smaller pieces. Bacteria and fungi continue to break down those dead plant and animal tissues, which become nutrients that are taken up through plant roots. Nematodes also eat plant material and other soil organisms, releasing vital nutrients in their waste. Specialized [mycorrhizal fungi](#) form symbiotic — or mutually beneficial — relationships with plants, bringing hard-to-reach nutrients and water directly to plant roots, while the plants provide the fungi with essential carbohydrates.

Remembering that soil is alive helps growers better recognize the time and attention required to build a healthy foundation for plants. So, how can you encourage this in your own garden? Understanding your soil composition is the first step to fostering an optimal soil ecosystem.



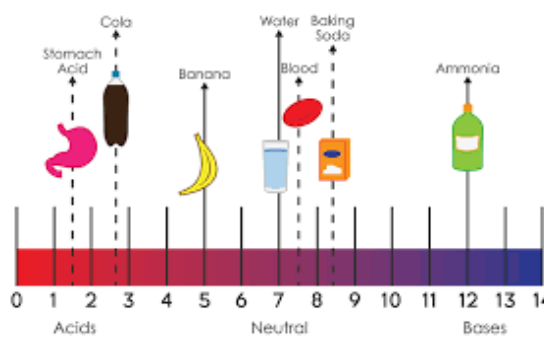
### Soil testing

Soil testing is always the first recommendation. A basic soil test measures the level of organic matter, pH, and macronutrients — nitrogen (N), phosphorus (P) and potassium (K). It sounds like something from high school chemistry, but

soil acidity is a key factor for home gardens and production farms. The acidity, or alkalinity, of the soil is a chemical factor that affects crop growth and development and is referenced using a numerical pH value.



Soil pH is the measure of hydrogen-ion activity in the soil. This is where the chemistry part comes into play. The pH is measured on a scale of 0 to 14. Anything below 7 is considered acidic — the lower the number, the more acidic it is. For example, lemon juice has a pH of 2 and battery acid is 0. Anything above 7 is a base (or alkaline if we're being technical), examples being baking soda at 9 and household bleach at 13. The most common example of a neutral item, having a pH of 7, is water.



Knowing the soil's pH will help indicate how well plants can take up important nutrients needed for growth and maturity. For example, if your soil pH is 5.0, this means that the hydrogen-ion activity is preventing plant roots from absorbing important nutrients such as nitrogen and potassium.

Correcting soil pH is a relatively straightforward process — spreading lime can increase the soil acidity and adding sulfur can decrease it. Before spreading, however, it is important to have a soil test conducted through your local Extension office. Each soil test can provide different recommendations based on what crops you wish to grow in an area, as some crops require different pH levels to thrive. There are different types of lime you can purchase. Ag lime is very common and made up of calcium, carbon and oxygen. It will do a good job of raising the pH in your soil. Dolomitic lime also raises the pH level of soil, but it has magnesium in it as well.

### Adding mulch

Additionally, incorporating mulch or another form of organic matter is important to building healthy soil. Organic matter improves physical properties such as air and water availability in soil, which are essential for plant roots and soil microbes.

Excessive tillage can cause soil compaction, reducing the pore space between soil particles. This makes it hard for plant roots to penetrate the soil, absorb water and nutrients, and interact with beneficial microbes. Compaction can also lead to drainage issues which can waterlog plant roots and increase runoff. Disturbing the topsoil also resurfaces

buried weed seeds, exposing them to light and increasing germination - in other words, encouraging more weeds.

Finally, mulching bare soil around plants prevents the splashing of soil particles and soil-borne pathogens onto leaves and stems, reducing the occurrence of some plant diseases.



More resources about healthy soils:

- <https://marinette.extension.wisc.edu/crops-and-soils-resources/>
- <https://xerces.org/publications/guidelines/farming-with-soil-life>
- <https://www.franklinswcd.org/data/doc/lib/1273/SWIFTlet-2-activity-SoilSuperheroes.pdf>

## WI Women in Conservation Host Free "Winter Conservation Camp" Webinars

<https://www.wiwic.org/>



Thanks to the enthusiastic response to our virtual Summer Camp series, we're continuing during the winter months! Come take advantage of this cozy, slower time of year to collaboratively dream and develop next steps for stewarding your land.

Join women landowners from across the state who share your passion for conservation and connect with expert advice, resources, and opportunities from our friends at Pheasants Forever around the virtual campfire. Winter camp bonus: We'll kick off each session with a recipe for a WiWiC favorite warm beverage!

Whatever your background, from beginners to experts, all women are welcome and we want to hear your story. Feel free to bring your lunch. S'mores optional. Wisconsin Women in Conservation is hosting a Winter Camp Session in January and February. RSVP for free at the website above. For more information, contact the WiWiC at [info@wiwic.org](mailto:info@wiwic.org) or call 608-844-3758.





## Conservation You Can Do! Conservation for Kids

<https://mdc.mo.gov/magazines/xplor/2023-01/conservation-you-can-do>

**Conservation** is a big word for a simple idea. It means taking care of nature so kids like you — and your kids and their kids and all who come after — can explore a fall forest, fish in a stream, or watch an eagle soar over a foggy marsh. *Conservation means leaving nature better off than when you found it.* Here are a few things you can do throughout the year, by yourself or with a grown-up, to give nature the boost it needs.

**Bash Some Trash** - Pick a trail or wild place near your house and promise to keep it trash-free for the rest of the year.



**Feed Your Feathered Friends** - Birds search for seeds all winter long. By March, pickings are slim, and feathered foragers welcome an easy meal. Setting up a bird feeder is a great way to help birds. For tips on where to put your feeder and what to fill it with, fly over to <https://naturalresources.extension.wisc.edu/five-tips-for-winter-bird-feeding/> or <https://www.schlitzaudubon.org/2019/01/07/helping-birds-in-winter/>.

**Stack Some Sticks** - Brush piles are like critter hotels. Cozy crannies between branches offer “rooms” where rabbits, sparrows, and other animals take shelter. To build a brush pile, ask a grown-up to cut down branches. Stack the thickest branches at the bottom and pile smaller ones on top. Keep stacking until you have a tangly pile about head high and 20 feet wide.



**Build a Nestbox** - Eastern bluebirds begin raising babies in spring. Make sure they have a home *tweet* home by building a nestbox. Grab a grown-up to help with construction and download the building plans at <https://www.audubon.org/news/how-build-bluebird-nest-box>.

**Plant a Tree** - Arbor Day - in Wisconsin the last Friday in April - is about appreciating trees. Trees clean the air, keep soil from washing into rivers, provide homes for animals, and offer shade to people. What's the best way to celebrate this leafy holiday? By planting a tree, of course! <https://dnr.wisconsin.gov/topic/treeplanting/tips>

**Leave Little Critters Alone** - Late spring is when baby animals start turning up in backyards. Keep your pets inside so they can't harm these easy-to-catch critters. And if you find a baby bird, newborn bunny, or small fawn, leave it alone. It isn't abandoned. Mom's probably hiding nearby and won't return until you leave.

**Push Back on Pesticides** - Pesticides are chemicals used to kill weeds and pesky insects. But they also harm good plants and helpful insects like bees

and butterflies. This spring, ask your parents to spray fewer pesticides or avoid using them altogether.

**Prevent a Crash Landing** - Glass is often invisible to birds, and up to a billion die each year when they fly headfirst into windows. Most crashes occur during migration. To prevent them, paint a picture on the outside of large windows. Use washable tempera paint, which is long-lasting but comes off with a damp sponge and some scrubbing.

**Beware of Speed Bumps** - In spring, turtles trudge across roads to look for mates and places to lay eggs. You can help them make it across safely. First, make sure it's safe to be on the street. Then, pick up the turtle by the back of its shell and carry it to the side of the road in the direction it was going. Afterwards, wash your hands with soap and water.



**Free your Fish** - If you don't intend to eat your catch, release a fish carefully so it has the best chance to survive. If possible, don't take a fish out of the water. If you must, wet your hand before handling it. Don't squeeze the fish too hard, and never put your fingers in its eyes or gills. If the fish has swallowed the hook, don't remove it. Cut the line instead.

**Bee Helpful** - Bumblebees are VBIs — very important bugs! They carry pollen from flower to flower, which helps plants make seeds. But some of our bumblebees are in trouble. You can help biologists learn how they're doing in your area by counting bees for the Wisconsin Bumblebee Brigade. For details, buzz over to <https://wiatri.net/inventory/bbb/>.



**Grow Native** - Bees, butterflies, and other pollinators are disappearing in alarming numbers. To bring back the buzz, plant native wildflowers in your yard. Native plants are adapted to Wisconsin's weather, they need less water, and they provide the best food for wildlife. For ideas about what to plant, visit <https://dnr.wisconsin.gov/topic/endangeredresources/nativeplants.html>.



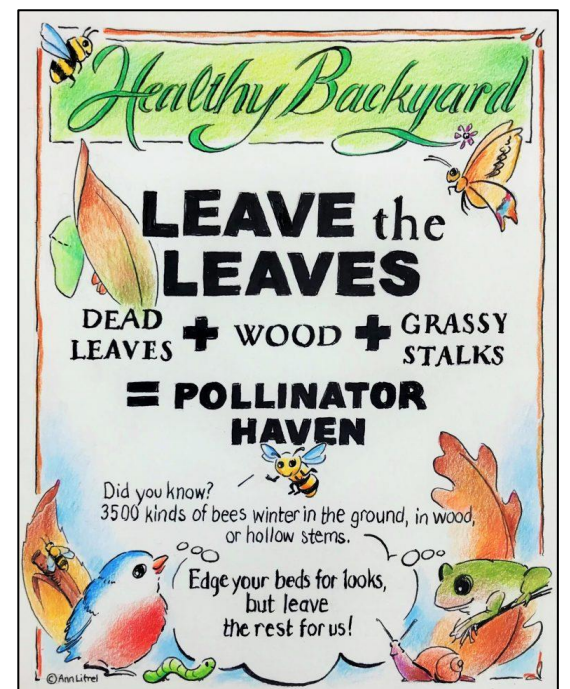
**Tag Monarchs** - In mid-September monarch butterflies flutter south to Mexico. You can help biologists track their movements by catching migrating monarchs and putting identification tags on their wings. To learn more, flutter over to <https://monarchwatch.org>.



**Multiply Milkweed** - For every monarch you see today, 20 years ago there were four more. You can help bring their numbers back up by planting milkweeds — a monarch caterpillar's favorite food — and planting them in your yard. For a detailed growing guide, visit <https://wiatri.net/Projects/Monarchs/habitat.cfm>.



**Leave the Leaves** - Fallen leaves add nutrients to the soil, create a layer of mulch that holds moisture in the ground, and provide a blanket that protects insects and other animals during winter. So give your rake a break, and let leaves lie on the ground until spring.





## Is It Wise To Fertilize?

By Brody Devine, Conservation Specialist  
Marinette County Land Information  
Department - Land & Water Conservation  
Division



You may have heard of **Nutrient Management Plans** but wondered what it means or why you should use it.

Nutrient Management Plans (NMPs) provide nutrient application recommendations that help you budget, supply, and manage nutrients on your fields. NMPs use the concept of the 4 R's: right fertilizer source applied at right rate, right time, and right place to make recommendations. This maximizes yield and reduces pollution through over applications.

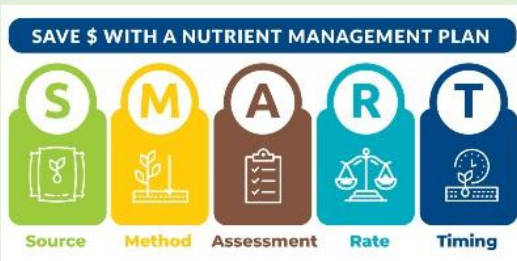
### NUTRIENT MANAGEMENT PLANS HELP LANDOWNERS TO:

- Supply essential nutrients needed for optimum crop growth
- Provide efficient and effective use of scarce nutrient resources
- Maintain/improve the physical chemical and biological condition of the soil
- Minimize/prevent nutrient and runoff based environmental degradation

These recommendations come from soil tests done on samples that are taken at 1 sample for every 5 acres on 4-year intervals. Plans can either be written by a farmer or through hiring an agronomist.

If you would like to learn how you can write your own NMP, are looking for funding to implement nutrient management, or would like more information, contact Brody at (715)732-7544 or email [Brody.Devine@MarinetteCountyWI.gov](mailto:Brody.Devine@MarinetteCountyWI.gov) at

For more resources & information about NMPs, also visit the "Farmers.gov" NMP website: <https://www.farmers.gov/conservation/nutrient-management>



## Register for the Pollinator Steward Certification, offered through the Pollinator Partnership

<https://www.pollinator.org/psc>



The **Pollinator Steward Certification** program is offered only by Pollinator Partnership, and empowers those interested in pollinator stewardship with the scientific understanding and practical know-how to help these immensely important animals.

Topics covered include pollinator lifecycles, Indigenous pollinator science, Lepidoptera conservation, small scale habitat creation in urban contexts, management within agricultural landscapes, application of habitat creation in large right-of-ways, and much more! Over 500 individuals from across the Americas have participated in this unique program since 2020.

**The 2023 program is set to begin on February 21st, 2023.** Register for the program at the website above - more information on speakers and content details will be shared closer to the start of the program.

**Certification requires two steps and one optional step:**

1. Completion of a 9-part virtual training module. Once complete, a short learning form must be filled out to share training takeaways.
2. Completion of 1 habitat creation action and 1 outreach and education action. A similar short form must be filled out to show proof of actions taken.
3. The Pollinator Steward Certification training is offered on a donation model to ensure accessibility for as many people as possible. We suggest a donation of \$250 USD for those who can afford it, though any amount you are able to donate will be put to work directly towards the continuation and improvement of this program.



The training component of Certification involves in-person learning, online modules, or a hybrid. Training is flexible and can meet the needs and interests of different groups. To achieve certification, participants must demonstrate understanding of certain components, which comprise approximately 10 hours of training with additional discussion/question periods. Topics include pollinator basics, indigenous perspectives, selecting plants for pollinators, habitat enhancement techniques, pollinator identification & monitoring, and education & outreach.

For more information about this program and to register, visit the website above.



## Growers Can Receive Compensation for Wildlife Damage



You may be eligible for a payment of \$500-\$10,000 for damage to the following commercial crops:

- Agriculture crops
- Commercial seedlings
- Orchard trees
- Nursery stock
- Apiaries
- And livestock are also eligible

Note: "Crops" includes those that have been harvested but not yet removed from agriculture land (i.e. silage, hay bales, etc.). *Damage from these animals is covered:* White tailed deer, black bear, Canada goose, turkey, cougar, and elk.

To be an eligible claimant:

- You must be the crop owner (can include leased land)
- You must have hunting access control (does not apply to apiaries)
- The property must have been in production, cultivation, or a USDA program for at least 5 consecutive years.

There are non-public hunting access options:

- No Public Hunting (ACT 82 deer permit only)
- Managed Hunting Access (MHA)
- Open Public Hunting (OPH)

**Note:** Hunters are always required to check with grower before hunting, and enrollees cannot charge fees for hunting.

The county damage specialist will work with you to determine what control methods will work best in your situation. It may include permanent fencing (around a feed storage pad for example), temporary measures, or shooting permits.

For question about this Wisconsin Wildlife Damage Abatement and Claims Program, please contact your local county land conservation staff for details. In Marinette County, call or text Andrew Marzec (USDA-APHIS) at 715-525-9208.

Be sure to contact the county damage specialist within 14 days of the beginning of damage, or provide notice based on past damage history or anticipated damage (call this winter with questions and to get on the list of enrollees).

For more information about this program you can also visit the WDNR website at <https://dnr.wisconsin.gov/topic/WildlifeHabitat/wdacp.html>.

## Northwoods Journal Online

Would you like to read current issues of the *Northwoods Journal* online? Go to [www.marinettecounty.com](http://www.marinettecounty.com) and search for "Northwoods Journal". We can also send you an e-mail reminder when each new issue is posted online. Contact Anne Bartels, Information & Education Specialist at 715-732-7784 or email [anne.bartels@marinettecountywi.gov](mailto:anne.bartels@marinettecountywi.gov).





**Best Practices for Pollinators Summit  
2023 – Hosted by the Pollinator  
Friendly Alliance, Xerces Society**  
<https://www.eventbrite.com/e/best-practices-for-pollinators-2023-tickets-467535991737?aff=ebdsoporgprofile>



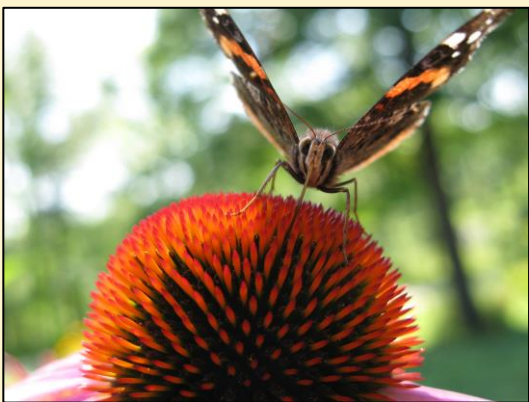
Join us for three days of live conversation with a wealth of presenters and topics on ecologically sound land stewardship practices that promote pollinators, climate resilience, clean water and lands. Summit topics provide practical knowledge and innovation on pesticide reduction, habitat installation, climate resilience and more. **Join every talk, or attend just your favorites - all three days \$50:**

- March 7, 2023: Tues, 10:00 AM - 3:00 PM
- March 8, 2023: Wed, 10:00 AM - 3:00 PM
- March 9, 2023: Thurs, 10:00 AM - 3:00 PM

**Who should attend:** Land stewards (private, public, community, county, state), policymakers, public works, environmental & parks commissions, conservation planners, roadside managers, parks & trails managers, community leaders, public & private area landscapers, conservationists, and educators.

For a daily schedule and more about the speakers and other information, visit <https://www.pollinatorfriendly.org/summit>.

Brought to you by [Pollinator Friendly Alliance](#) and The [Xerces Society for Invertebrate Conservation](#).



**Meet the Spectacular Snow Flea!**



Most insects are not active in the winter, but the **snow flea** is an exception. *Snow fleas are not actually fleas*, and are not generally considered to be insects either - they're a primitive type of almost-insect that is more closely related to crustaceans. ***They're much more resistant to cold than most bugs because their bodies make a protein that acts as an antifreeze***, allowing the snow fleas to remain active even in the winter. On warmer or sunnier days, you may notice them around the bases of trees - look for lots of little black specks on the snow.



Snow fleas eat decaying plants, helping with the important job of breaking down dead plant matter and returning nutrients to the soil. On warmer winter days, they can be seen on the snow surface, looking like tiny pepper grains. Scientists think they eat fungal spores and algae on the surface of the snow.

For more about these interesting insects, visit:

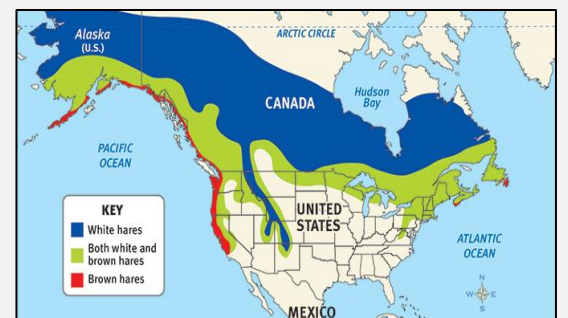
- ✓ <https://www.facebook.com/NatureNet/>
- ✓ <https://insectlab.russell.wisc.edu/2020/02/27/snow-fleas-when-a-flea-isnt-a-flea/>
- ✓ [https://www.canr.msu.edu/news/the\\_winter\\_season\\_highlights\\_snow\\_fleas](https://www.canr.msu.edu/news/the_winter_season_highlights_snow_fleas)
- ✓ <https://hortnews.extension.iastate.edu/2010/1-6/snowfleas.html>
- ✓ <https://www.cbc.ca/news/canada/nova-scotia/snow-fleas-winter-suzanne-blatt-insects-agriculture-and-agrifood-canada-1.5045127>

**The Snowshoe Hare in the Year of the Rabbit!**

<https://www.nationalgeographic.com/animals/mammals/facts/snowshoe-hare>



Snowshoe hares are forest-dwellers that prefer the thick cover of brushy undergrowth. They are primarily a northern species that inhabits boreal forests and can also range as far north as the shores of the Arctic Ocean. Along North American mountain ranges, where elevation simulates the environment of more northerly latitudes, they can be found as far south as Virginia (the Appalachians) and New Mexico (the Rockies).



Hares are a bit larger than rabbits, and they typically have taller hind legs and longer ears. Snowshoe hares have especially large, furry feet that help them to move atop snow in the winter. They also have a snow-white winter coat that turns brown when the snow melts each spring. It takes about ten weeks for the coat to completely change color.

Snowshoe hares feed at night, following well-worn forest paths to feed on trees and shrubs, grasses, and plants. These animals are nimble and fast, which is fortunate, because they are a popular target for many predators. Lynx, fox, coyote, and even some birds of prey hunt this wary hare.

Like most hares (and rabbits), snowshoe hares are prolific breeders. Females have two or three litters each year, which include from one to eight young per litter. Young hares, called leverets, require little care from their mothers and can survive on their own in a month or less. Snowshoe hare populations fluctuate cyclically about once a decade - possibly because of disease. These waning and waxing numbers greatly impact the animals that count on hares for food, particularly the lynx.



For more about snowshoe hares, visit:

- <https://superscience.scholastic.com/issue/s/2018-19/120118/out-in-the-cold.html#880L>
- <https://www.nps.gov/articles/netn-species-spotlight-snowshoe-hare.htm>

**Local PFAS News - Results Now Available for Surface Water Samples  
Collected from Lake Noquebay**

In November 2022, the Wisconsin Department of Natural Resources (DNR) collected six surface water samples from Lake Noquebay, near Crivitz, Wisconsin, to evaluate the current per- and polyfluoroalkyl substances (PFAS) concentrations in the lake. The concentrations were less than 1 parts per trillion (ppt) for perfluorooctanoic acid (PFOA) and less than 0.2 ppt for perfluorooctane sulfonate (PFOS), which are below Wisconsin surface water standards. The full results are available on the [DNR's PFAS Data Viewer](#); click on the sampling points in Lake Noquebay to access a file of the data.

JCI/Tyco is responsible for completing a site investigation to evaluate PFAS in and around fields where biosolids from the city of Marinette were previously land-spread. Lake Noquebay is in proximity to several of these fields.

For additional information about the ongoing investigation, please visit online at the DNR's webpage, [PFAS Contamination in the Marinette and Peshtigo Area](#), or visit <https://dnr.wisconsin.gov/sites/default/files/topic/PFAS/jci/Presentation20221026.pdf>.

To leave a message or ask questions of DNR staff by phone, dial toll-free: 1-888-626-3244. To comment or ask questions by email, contact DNR staff at [DNRJCI@dnr.wisconsin.gov](mailto:DNRJCI@dnr.wisconsin.gov).





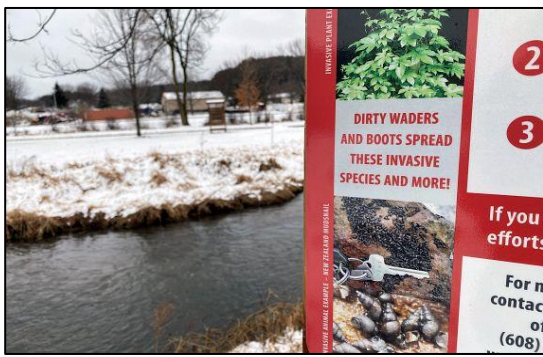
## Help Protect Our Streams from Aquatic Invasive Species and Alternatives to Live Bait

<https://dnr.wisconsin.gov/newsroom/release/66016> & <https://www.facebook.com/WildRiversISC>

Also excerpts from <https://fwwa.org/2021/03/22/winter-to-spring-weather-mix-brings-ais-reminders-to-excited-boaters-and-anglers/>

The Wisconsin Department of Natural Resources (DNR) reminds anglers out for the early inland trout season to help protect our streams from aquatic invasive species. Some fishing streams may contain invasive species, and if care is not taken, those species can accidentally be transferred to another.

New Zealand mudsnails have one of the highest potentials of spreading from one water to another. Only 4-6 millimeters in length, they can easily get stuck in the mud and picked up on boots, waders and gear. Felt-soled boots are particularly susceptible to these snails as they can lodge into and under the felt. The snails can live in the mud along the shore, so they can be spread without ever stepping foot into the water.



Some seeds and fragments of invasive plants can survive throughout winter under the ice. Thoroughly cleaning fishing gear before leaving a fishing site can help stop the chance of spreading invasive species.

Cold Wisconsin winters usually help combat the spread of invasives. The DNR encourages anglers to leave fishing gear where it can freeze for 8 hours or more as this will kill most species, including New Zealand mudsnails. Other methods to kill aquatic invasive species hiding in fishing gear are to steam clean the gear or to soak it in either 140° water or 2% Virkon solution (5.4 tablespoons per gallon) for 20 minutes. Many people aware of the risks will also switch to a new set of gear for a second adventure, especially if they have been fishing in a stream known to have mudsnails.

A few minutes of preventative action can help preserve and protect waterways for generations to come. Before leaving a fishing site, anglers should:

- **Inspect** fishing equipment for attached aquatic plants, animals or mud.
- **Remove** all attached plants or animals.
- **Drain** all water from buckets and containers.
- **Never move** live fish away from a waterbody (fish out of water = dead).

To learn more about invasive species and their impacts on Wisconsin's waters, visit the DNR's [Aquatic Invasive Species webpage](#).

### Know Your Invasives - some examples

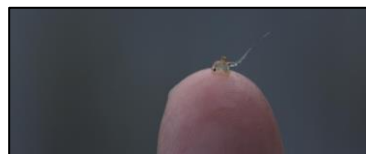


**Zebra mussels** are fingernail-sized mollusks that filter algae, which is a primary food source for many native fish, out of water bodies. While zebra mussels are generally a summertime concern, they travel from the cold shallows to the warmer depths in winter to avoid freezing. Thus, any mud extracted during the winter months could still contain mussels or their larvae.

**Curly-leaf pondweed** is a rooted plant with "wavy, lasagna-like" leaves and which thrives in winter temperatures. Using its love of the cold to its advantage, curly-leaf pondweed outpaces



native plant growth, robbing them of sunlight and threatening local biodiversity. Also concerning is that the pondweed provides unsuitable food and shelter for native animals.



**Spiny water fleas** are miniscule and difficult to see, as they have translucent bodies. Despite their evasive appearance, they are predators which snack on zooplankton, which puts them in competition with young fish for food. Young fish also struggle with eating the fleas due to their long, spiny tails, so the increased absence of zooplankton puts them at even greater risk.



**Eurasian watermilfoil** is another rooted plant, but it has feather-like leaves. Because Eurasian watermilfoil is an early grower which is also tolerant to cold water, it is much like curly-leaf pondweed, growing sooner and more abundantly than native plants. Dense mats of the dominant invasive weeds can gather at the surface and impede recreational activities, too.

## Live-bait Alternatives

How to catch your favorite fish without releasing an invasive species



### For pan fish use:

- dry dog food
- soft plastic bait
- canned corn



### For larger fish use:

- sliced turkey liver
- fish flesh
- plastic jerk bait

A reminder to stop invasive species by watching what kind of bait you use for fishing – check out the alternative ideas above instead of live bait.

We know recreational fishing, including ice fishing, is a treasured pastime for people in the Upper Peninsula of MI and the Northeast WI, but it is also a major pathway for aquatic invasive species (AIS) spread. To reduce the likelihood of introducing AIS to your favorite ice fishing hole, try using alternatives to live bait.

If you prefer to use live bait, make sure you are purchasing it from a certified dealer or catching it in the waterbody it will be used in. Follow your state's bait laws for proper disposal, transport, and storage.

When buying bait at a retailer, keep an eye out for invasive Rusty Crayfish, Red Swamp Crayfish, Rainbow Smelt, and Jumping Worms! Together we can help protect our aquatic habitats & resources, and prevent the spread of these harmful organisms in our waterways.

## North American Invasive Species Awareness Week (NISAW) 2023

<https://www.nisaw.org/> & <https://www.facebook.com/invasivespeciesweek>



NISAW is an international event to raise awareness about invasive species, the threat that they pose, and what can be done to prevent their spread. NISAW is powered by The North American Invasive Species Management Association ([NAISMA](#)), which supports local, state, and regional organizations to make NISAW their own with these tools:

### Outreach and Communications

NAISMA encourages local, state, and regional organizations to use the [FREE NISAW toolkit](#) of outreach and communications resources to raise awareness of local invasive species concerns to elected officials, agency leadership, and the public. NAISMA's emails, social media posts, and digital advertising campaign aims to reach 500,000 viewers.

### Educational Invasive Species Webinars

NAISMA hosts [educational webinars](#) on priority invasive species issues the week of NISAW and the 3rd Wednesday of each month. Other organizations may host webinars also. Get more information and register on the [NISAW events](#) page.

### Congressional Briefings

NISAW provides an opportunity for organizations to hold formal briefings for Congressional staff to educate and inform on a specific topic or bill.

### Individual Meetings

NISAW provides an opportunity for individuals and organizations to meet with elected officials and agency leadership to communicate priorities for invasive species legislation, funding, policy, and management.

### Local Events and Awareness Weeks or Months

NAISMA promotes state and local events and Awareness Weeks or Months utilizing the [NISAW events](#) page and social media channels.

For more about NISAW in Wisconsin:

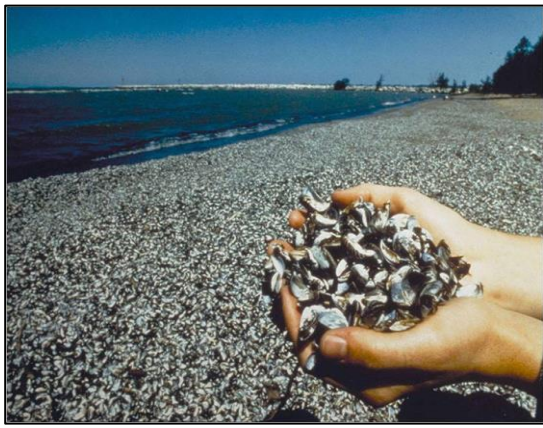
- ✓ <https://forestrynews.blogs.govdelivery.com/2018/03/02/national-invasive-species-awareness-week/>
- ✓ <https://dnr.wisconsin.gov/topic/invasives/>





## EPA Needs to Finalize Ballast Water Standard to Protect the Great Lakes

Excerpts from <https://blog.nwf.org/2022/10/closing-the-door-on-invasive-species/> (10/22)



Zebra mussels, above — an invasive species introduced through ballast water in the 1980s — have wreaked havoc throughout the Great Lakes. If we don't make changes now to strengthen ballast water standards, it's only a matter of time before more species with potentially worse consequences further disrupt the native ecosystem of the Great Lakes.

### How did we get here?

The steady march of invasive species into the Great Lakes started over a century ago but has ramped up in the last six decades with the opening of the St. Lawrence Seaway. This massive human-made waterway connected the Great Lakes and the oceans around the globe for the first time when it opened in 1959.

While the Seaway proved a boom for commercial shipping, it also introduced a host of invasive species via ballast water into the accommodating freshwater Great Lakes. In fact, over 60 percent of all non-native invaders discovered since the opening of the St. Lawrence Seaway are attributable to ballast water discharge from ocean-going vessels.

Common in the hulls of cargo ships to provide stability in rough sea conditions, ballast water also allows invasive species to hitch a ride across oceans. Scientists, conservationist groups, and outdoor enthusiasts have long called for strong regulations over how commercial ships operate in public waterways, but the regulations are still lacking — so the invasive issues continues to grow.

Invasive species have proliferated over the years and so have the problems they cause. For example, the poster child of invasive species, the zebra mussel, has myriad negative impacts on the lakes, including depriving other plankton of food, transferring nutrients to the lake bottoms, and contributing to the growth of harmful algal blooms.

To survive, zebra mussels must attach themselves to a hard object like a rock, the hull of a ship or a metal pipe. Factories, power plants, and water treatment systems are constantly dealing with the expense of mussels clogging their intake pipes. And if that weren't enough, when they die, zebra mussels leave behind shells that wash ashore by the thousands. These shells not only detract from the natural beauty of the shoreline, but they're also sharp enough to cut a bare foot.



The invasive species — zebra and quagga mussels, Eurasian milfoil, among others — have entered the Great Lakes in the ballast water discharged from ships. The newcomers devastate local aquatic populations by consuming large quantities of phytoplankton and algae, taking away nutrition from smaller fish. This, in turn, reduces the food available for prized walleye, lake trout, or salmon, reducing opportunities for anglers who enjoy fishing opportunities on the Great Lakes.

In addition to hurting outdoor recreation, invasive species can damage pipes, pumping stations, reservoirs, and other public and private infrastructure, harming local economies. The critters are small, but their impact is large, costing the Great Lakes region [more than \\$200 million each year](#) in damages and control costs.

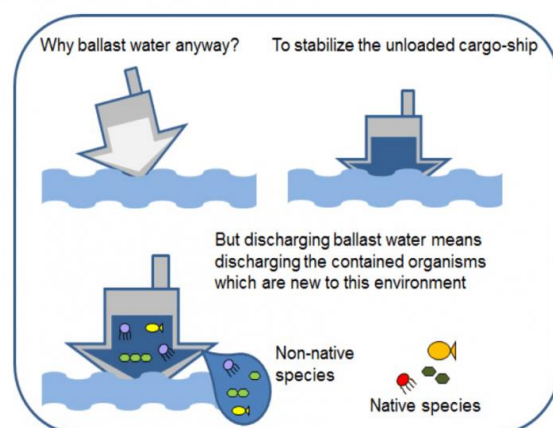
### The problems continue

Oceangoing vessels — or 'salties' — can carry large quantities of ballast water — sometimes millions of gallons — and then discharge or exchange it when they reach a port where they unload or load new cargo. If that port is on the Great Lakes, via the St. Lawrence Seaway, then the discharged ballast can include all kinds of unwanted visitors, including the invasive species that are harming local fisheries and water systems.



But oceangoing vessels aren't the only problem. Studies show that all vessels — including "lakers," or commercial vessels that don't leave the Great Lakes — contribute to moving invasive species around the region.

The Great Lakes are a multi-faceted ecosystem, one that includes commercial shipping and other job-creating economic activity. Protecting our precious waters from invasive species, however, is a long-term investment that requires that all ships that operate in the Great Lakes place stronger controls to stop new introductions and spreading invasive species. Much like [invasive carp](#), the damage by invasive species introduction via ballast water is not just a Great Lake problem, it's a national problem that needs a national response.



### What are the solutions?

In October 2020, the U.S Environmental Protection Agency published a draft ballast water standard intended by Congress to limit the damage caused by invasive species. However, the EPA proposal falls short of providing the strong safeguards needed to

aggressively address the problem. One major issue: The EPA proposal gives a free pass to "lakers" or large ships that only operate in the Great Lakes but play a major role in spreading invasive species from one waterway to another. In addition, the EPA failed to utilize best available technology to help set the standard. The good news is that this draft standard was never finalized before the Biden Administration took over in January of 2021. Over the past two years, EPA has been more or less quiet on this. Last summer however, there were several listening sessions with industry, conservation organizations, and other stakeholders on the ballast standard.

NWF and other conservation groups provided additional comments for consideration. The biggest update since Oct 2020 when the draft standard was issued is that Canada finalized its long-awaited ballast water standard. Remember, we share the Great Lakes with our friends to the north. While not as protective as we would have liked, in short, the Canadian standard does require that all ships that move through the Great Lakes — salties and lakers — must be regulated and have technology on their ships to prevent the discharge of invasive species.

Having one standard management practice will make it easier for the shipping industry to comply with ballast management, so having Canada on the same page will be important. Moreover, it doesn't give lakers a pass. The US EPA must at a minimum be consistent with the Canadian ballast standard and require that all vessels be regulated under the Clean Water Act.

Unfortunately, nothing has come from EPA since last summer. So, in an effort to raise the urgency and push EPA to act, NWF recently joined with 160 environmental, wildlife conservation, public health, commercial, and sport fishing organizations, Native American tribes, water agencies, lake management societies, environmental law foundations, local government agencies, and others — including local, state and regional organizations in 38 states — in sending a [letter](#) asking President Biden to direct the EPA to establish ballast water standards that comply with the Clean Water Act.

It is long overdue to advance a ballast water standard that regulates all vessels, uses best available technology, is compliant with the Clean Water Act, and protects our Great Lakes and all the nation's waters from invasive species. We can do this. We have done this before. We have the catalytic converter to control toxic gases emitting from internal combustion engines. And, just look at CAFE standards for the cars we drive. EPA set a standard and the automotive industry had to design cars to be more fuel efficient. This same approach can and must be applied to ballast water management.

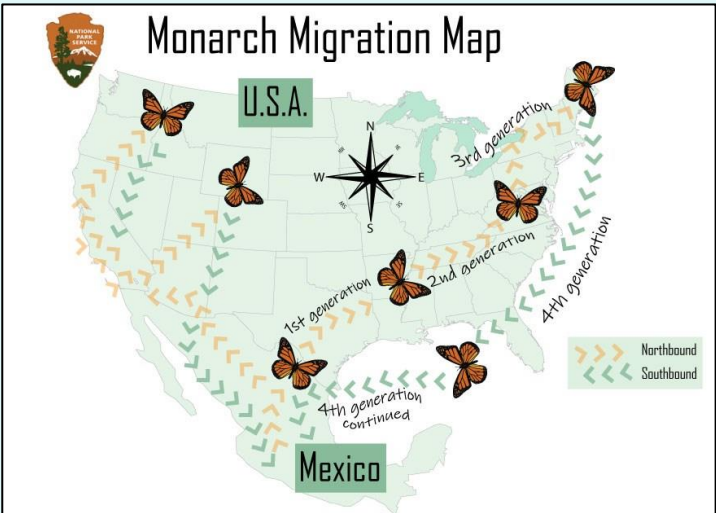
Our Great Lakes are too important to our economy, our wildlife, and our quality of life for us not to work together to solve big problems like preventing invasive species from spreading across the Great Lakes via ballast water discharge. We hope the Biden EPA will move on this and finalize a ballast water standard that protects the Great Lakes and all waters across the country.





Animals’ winter survival techniques include:

- **migration** (e.g., butterflies, birds, elk)
- **hibernation** (e.g., groundhogs, wood frogs, bats)
- **torpor** (e.g., bears, squirrels, raccoons)
- **brumation** (e.g., turtles, snakes)
- **changing color** (e.g., snowshoe hares, arctic foxes)
- **thicker coats** (e.g., mountain goats, moose)
- **making their own ‘antifreeze’** (e.g., insects, fish)



Winter Photography Tips

By Rob Sheppard, National Wildlife  
[www.nwf.org](http://www.nwf.org)



Winter can bring tough snow and cold conditions to much of the country. A lot of people not only quit going outside, but also quit taking photos of nature. Nature is still around in winter, and if you keep your camera from hibernating, you will find some great photo ops around you. Here are some tips to help you get better photos in winter:

- ✓ Keep an extra battery warm. Your camera will do fine in the cold, but your batteries won't. Be ready to trade a cold battery for a warm one if your camera stops working properly.
- ✓ Find a pair of flexible gloves. I have found nice fleece gloves with a rubberized grip that work very well (fleece gloves need the grip because the fleece is too slippery on a camera).
- ✓ Use a two-glove system when it is really cold. I usually have a lighter pair of gloves for shooting, then a large pair of mittens to go over them in between shots.
- ✓ Wear warm boots and socks.

Photographers often stand around a bit as they wait for sunset, for example, so warm boots are really a plus.

- ✓ Watch your exposure. Snow is white and should usually look with in a photograph, not gray. Snow scenes often cause a camera to underexpose it. Try increasing your exposure compensation by a full step (most digital cameras have this ability).
- ✓ Never bring a cold camera directly into a warm space. This can cause very unwelcome condensation on ~ and much worse, inside ~ your camera. Put your camera inside a zipped camera bag or inside a plastic ziploc or other sealable bag, then bring it inside to warm up.
- ✓ Get outside right after it snows. Some of the best snow conditions for photography happen then.
- ✓ Get outside right after a quick drop in temperature. That's when you often find some fantastic ice formations to photograph.
- ✓ Photograph snow and ice at sunrise and sunset. Winter sunsets are early and often have great color. Both sunrise and sunset color reflects in the snow and ice.
- ✓ Think about investing in a pair of snowshoes! They will get you just about anywhere you need to be for a photograph. Skis can limit where you can go, and snow is often too deep to walk in regular shoes for any distance.



Marinette County Monthly Photo Contest!

Any budding photographers out there? Marinette County Tourism & Parks are holding a monthly contest for pictures of Marinette County. Every month in 2023 the Marinette County Tourism & Parks Departments will be hosting a photo contest to highlight our natural resources.

You can submit your photo(s) by posting them to your personal Facebook or Instagram account. You must add the two following Marinette County hashtags to your post in order to enter:

[#exploremarinettecounty](https://www.facebook.com/exploremarinettecounty) and  
[#explorephotocontest](https://www.facebook.com/explorephotocontest).

For more information, as well as the terms and conditions, visit online at  
<https://www.exploremarinettecounty.com/pages/photo-contest/>.

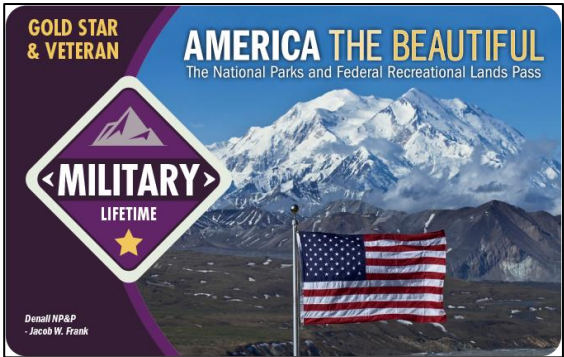




## New Lifetime Pass Available for Military Veterans and Gold Star Families to Access Public Lands

<https://www.doi.gov/pressreleases/new-lifetime-pass-available-military-veterans-and-gold-star-families-access-public>

In November 2022, the Biden-Harris administration announced that starting on Veterans Day (Nov. 11), veterans of the U.S. Armed Services and Gold Star Families can obtain a *free lifetime pass* to more than 2,000 federal recreation sites spread out across more than 400 million acres of public lands, including national parks, wildlife refuges, and forests.



“We have a sacred obligation to America’s veterans. This new lifetime pass is a small demonstration of our nation’s gratitude and support for those who have selflessly served in the U.S. Armed Forces,” said **Secretary of the Interior Deb Haaland**, whose father served during the Vietnam War. “I’m proud the Department of the Interior can provide veterans and Gold Star Families opportunities for recreation, education and enjoyment from our country’s treasured lands.”

“Our national forests and grasslands represent so much of the beauty of the nation our brave service members have sacrificed so much for,” said **Agriculture Secretary Tom Vilsack**. “Though they can never be fully repaid, by connecting the families of the fallen and those who served with these iconic places, we can, in a small way, say thank you.”



Rocky Mountain National Park, Colorado

“The U.S. Army Corps of Engineers and our federal teammates are proud to honor our veterans with free lifetime access to more than 2,000 federal recreation areas across the nation,” said Lieutenant General (LTG) Scott Spellmon, Chief of Engineers, U.S. Army Corps of Engineers. “This is a small token of appreciation for veterans who have bravely dedicated their lives to defending our freedom.”



Seney Wildlife Refuge, Upper Michigan

Each lifetime pass covers entrance fees for a driver and all passengers in a personal vehicle (or passholder and up to three adults at sites that charge per person) at national parks and national wildlife refuges, as well as standard amenity fees at national forests and grasslands, and at lands managed by the Bureau of Land Management, Bureau of Reclamation and U.S. Army Corps of Engineers.

Veterans can present one of the four forms of acceptable ID (Department of Defense ID Card, Veteran Health ID (VHIC), Veteran ID Card, or veteran’s designation on a state-issued US driver’s license or ID card) at [participating federal recreation areas](#) that normally charge an entrance fee. Gold Star Families obtain information, self-certify they qualify and download a voucher by visiting the [U.S. Geological Survey’s website](#).



Sunset over Lake Superior at Isle Royale National Park in Lake Superior

The Alexander Lofgren Veterans in Parks Act, passed in December 2021, authorized free lifetime access to federal lands to veterans and Gold Star Families. The new lifetime pass for veterans and Gold Star Families is in addition to the free annual Military Pass, which has been available to active duty servicemembers and their families since Armed Forces Day, May 19, 2012.

Federal recreational land management agencies offer additional lifetime passes, including a Senior Pass for US citizens or permanent residents over age 62 and an Access Pass for US citizens or permanent residents with a permanent disability. More information is available on [NPS.gov](#).

The Interior Department and other federal land agencies also offer [fee-free entrance days](#) for everyone throughout the year to mark days of celebration and commemoration, including the birthday of Martin Luther King, Jr., National Public Lands Day, and Veterans Day.



## Outdoor Fun - Making Yummy Campfire Cobbler!

<https://mdc.mo.gov/magazines/xplor/2023-01/how-bake-campfire-cobbler>

This yummy cobbler baked over campfire coals will make your taste buds turn cartwheels. A Dutch oven is a heavy iron pot with a tight-fitting lid. It’s used for making all kinds of dishes, from beef brisket to sourdough bread. Although it’s too heavy to carry in a backpack, it’s perfect to bring along when you go car camping.

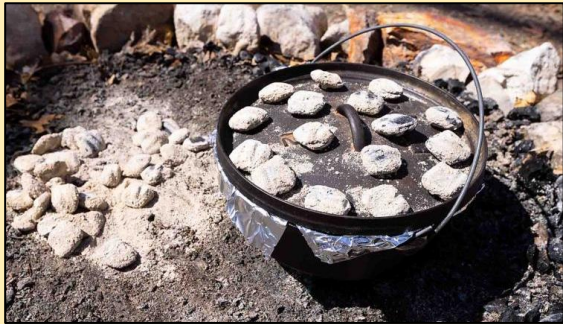
### Here’s What You Need

- 1 package yellow cake mix
- 2 cans of fruit pie filling
- 1 can of lemon-lime soda
- 4 tablespoons of butter
- 12-inch Dutch oven
- Lid lifter for Dutch oven
- Heavy-duty aluminum foil
- Spoon for serving
- Extra-long kitchen tongs
- Thick leather gloves
- Charcoal (optional)



### Here’s What You Do

- Let a campfire burn down to glowing orange coals or light a pile of charcoal.
- Line the inside of the Dutch oven with aluminum foil. This will make cleanup much easier!
- Spoon pie filling into the bottom of the oven. Layer cake mix over the top. Flake butter over everything. Pour in the soda, but don’t mix the ingredients.
- Put the lid on the oven and pull on leather gloves. Use tongs to evenly space eight large coals (or charcoal briquettes) in a small circle and set the oven on top of them.



- Arrange 16 coals on the oven’s lid. Let the cobbler bake for 30 minutes, then lift the oven off of the bottom coals.
- Leave the top coals on the lid and bake for 15 more minutes or until the cobbler turns golden-brown.

Let the cobbler cool for 10 minutes — if you can wait that long!





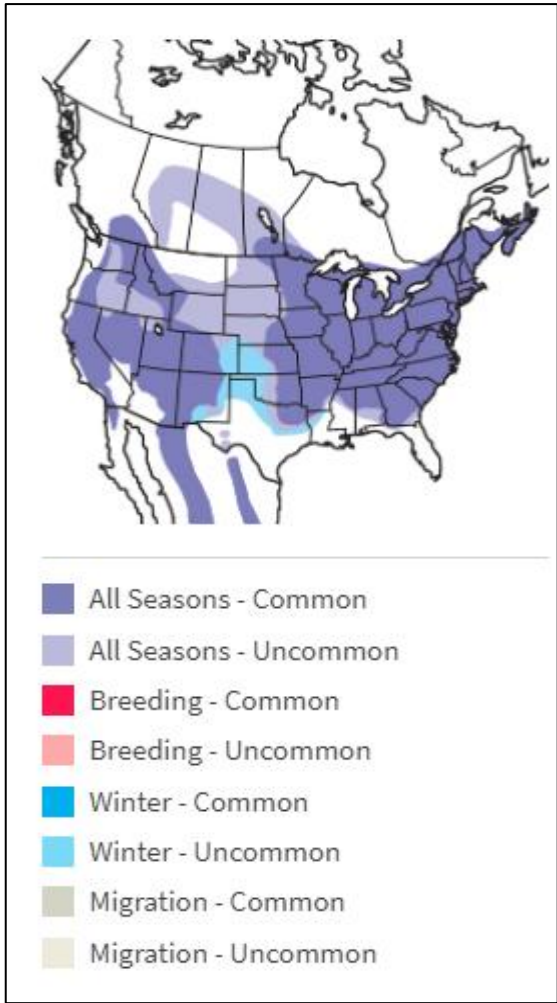
Meet the White-Breasted Nuthatch!

<https://www.audubon.org/field-guide/bird/white-breasted-nuthatch> & <https://www.birdsandblooms.com/birding/bird-species/songbirds/white-breasted-nuthatch/>



Readily attracted to bird feeders for sunflower seeds or suet, the White-breasted Nuthatch may spend much of its time industriously carrying seeds away to hide them in crevices. Its nasal calls are typical and familiar sounds of winter mornings in deciduous woods over much of North America.

**Habitat:** forests, woodlots, groves, shade trees. Typically in mature deciduous forest, also in mixed forest with some conifers; rarely found in pure coniferous forest. Often favors woodland edge, along rivers, roads, clearings; may be in suburbs or parks as long as large trees are present.



**Feeding Behavior:** Forages mainly on trunk and larger limbs of trees, climbing about and exploring all surfaces. Sometimes feeds on ground. During fall and winter, regularly caches food items in bark crevices on territory.



**Diet:** mostly insects, also seeds. Eats mostly insects (and spiders) during summer, supplementing these with seeds in winter. Proportion of seeds in diet may vary from zero in summer to more than 60% in winter. Will also feed on suet and peanut-butter mixtures at feeders. Young are fed entirely on insects and spiders.

**Nesting:** pairs remain together on nesting territory all year, may mate for life. Courtship behavior begins by late winter. In courtship display, male raises head, spreads tail, droops wings, sways back and forth, and bows deeply. Male also performs much courtship feeding of female. Nest site is large natural cavity or old woodpecker hole, usually 15-60' above ground; may rarely use birdhouses; may sometimes excavate own nest cavity. Female builds nest in cavity, a simple cup of bark fibers, grasses, twigs, hair.

Adults may spend minutes at a time sweeping the outside and inside of nest with a crushed insect held in bill; chemical secretions of insects may help repel predators. Also sometimes adds mud to rim of nest entrance.

**Eggs:** 5-9, rarely 10. White, spotted with reddish-brown. Female incubates, is fed on nest by male. Incubation period 12-14 days.

**Young:** both parents feed young. Age when young leave nest uncertain, or perhaps quite variable; reported as 14-26 days. 1 brood per year.



A close relative is the Red-breasted Nuthatch. With its quiet calls and dense coniferous forest habitat, this nuthatch may be overlooked until it wanders down a tree toward the ground. It often shows little fear of humans, and may come very close to a person standing quietly in a conifer grove. Red-breasted Nuthatches nest farther north and higher in the mountains than their relatives; when winter food crops fail in these boreal forests, they may migrate hundreds of miles to the south.



For more about this species, visit <https://www.audubon.org/field-guide/bird/red-breasted-nuthatch>.

NACD Applauds Strong Conservation Investments in Federal Spending Bill

<https://www.nacdnet.org/newsroom/48584/>



The National Association of Conservation Districts (NACD) applauds Congress for passing a Fiscal Year 2023 federal spending agreement that supports voluntary, locally-led conservation efforts across the country by providing strong funding for critical conservation programs and initiatives. The spending package includes:

- **No cuts to mandatory spending for USDA farm bill conservation programs**, such as EQIP, CSP, RCPP, and CRP.
- **\$941 million for NRCS Conservation Operations**, including more than \$800 million for Conservation Technical Assistance – a \$40 million increase compared to FY 2022 funding. This supports the work of conservation districts and other local partners to help assess resource needs, develop conservation plans, and implement effective conservation practices.
- **More than \$337 million for the U.S. Forest Service's State and Private Forestry Program** – a more than \$20 million increase compared to FY 2022 funding.
- **\$12.5 million for the U.S. Forest Service's Forest Stewardship Program** – a \$500,000 increase compared to FY 2022 funding.
- **\$182 million for EPA's Nonpoint Source Management Program** – a \$4 million increase compared to FY 2022 funding.
- **\$925 million for NRCS' Emergency Watershed Protection Program**, \$75 million for Watershed Protection and Flood Prevention Operations Programs, and \$2 million for the Watershed Rehabilitation Program.

The agreement also includes a revised version of the bipartisan *Growing Climate Solutions Act*, to help farmers, ranchers, and private forestland owners access voluntary environmental credit markets by authorizing USDA to establish a registry list for farm technical advisers and verification services. The agreement also includes the *SUSTAINS Act*, which will facilitate USDA accepting private funds to support the agency's efforts to address climate change, sequester carbon, improve wildlife habitat, and enhance water quality.

Notably, the bill also includes \$3.7 billion for USDA's Emergency Relief Program to assist producers who suffered losses due to natural disasters. President Biden signed the bill into law on December 29, 2022.

NACD is a nonprofit organization that represents nearly 3,000 conservation districts across the United States, their state and territory associations, and the 17,000 people who serve on their governing boards. For more than 75 years, local conservation districts have worked with cooperating landowners and managers of private working lands to help them plan and apply effective conservation practices. For more information about NACD, visit [www.nacdnet.org](http://www.nacdnet.org).





## 7 Benefits of Indoor Plants

<https://www.healthline.com/health/healthy-home-guide/benefits-of-indoor-plants>



- areca, lady, dwarf date, and bamboo palms
- Boston fern
- rubber tree
- spider plant
- Ficus tree



Indoor gardening is enjoying a surge in popularity, fed by Instagram's greenery-inspired interior designs, plant-based podcasts, and online plant subscription services like Lazy Flora and Grounded.

While social media trends are notorious for rapid flourish-and-fade lifecycles, indoor gardening may endure longer than most because of the many ways houseplants improve health and well-being. Here's what research tells us about the benefits of living and working with indoor plants.

### 1. Indoor plants may help reduce stress levels

A [study](#) published in the Journal of Physiological Anthropology found that plants in your home or office can make you feel more comfortable, soothed, and natural.

In the study, participants were given two different tasks: repotting a houseplant or completing a short computer-based task. After each task, researchers measured the biological factors associated with stress, including heart rate and blood pressure.

They found that the indoor gardening task lowered the stress response in participants. The computer task, on the other hand, caused a spike in heart rate and blood pressure, even though the study participants were young men well-accustomed to computerized work. Researchers concluded that working with plants could reduce both physiological and psychological stress.



### 2. Real plants may sharpen your attention

Sorry, plastic plants won't help you pass your exams. In a [small study](#) involving 23 participants, researchers put students in a classroom with either a fake plant, a real one, a photograph of a plant, or no plant at all. Brain scans of the participants showed that the students who studied with real, live plants in the classroom were more attentive and better able to concentrate than students in the other groups.

### 3. Working with plants can be therapeutic

For people experiencing the symptoms of mental illness, indoor gardening can be helpful. [Researchers](#) have used horticultural therapy to increase feelings of well-being among people with depression, anxiety, dementia, and other conditions. Although horticultural therapy has been around for centuries, it has found a modern expression: medical clinics in Manchester, England, are

now "prescribing" potted plants to patients with depression or anxiety symptoms.

### 4. Plants may help you recover from illness faster

Being able to look at plants and flowers may speed your recovery from an illness, injury, or surgery. A [2002 review](#) of the research revealed that people recuperating from several kinds of surgery needed less pain medication and had shorter hospital stays than people who weren't looking at greenery during their recovery periods.

### 5. Plants may boost your productivity

A bromeliad may turn out to be the best cubicle-mate you've ever had. Multiple studies have found that plants in the workspace increase both productivity and creativity. One frequently cited [study from 1996](#) found that students in a campus computer lab worked 12 percent faster and were less stressed when plants were placed nearby.

In a [2004 study](#) researchers challenged people to make creative word associations. They performed better when a plant was in the room with them. And a [2007 study](#) showed that people with more plants in their workspace took fewer sick days and were more productive on the job.

### 6. Plants may improve your whole outlook on work

A view of the city park might improve anyone's job satisfaction — but it might surprise you to learn that a potted plant could have a similar effect. [Researchers](#) interviewed over 440 Amazon employees in India and the United States. They found that those whose office environment included natural elements like indoor plants felt greater job satisfaction and more commitment to the organization than those who didn't work around natural elements. Researchers said the natural elements helped to buffer the effects of job stress and anxiety.



### 7. Plants may improve the quality of indoor air

Scientific support for *phytoremediation* — that's the word for plants scrubbing contaminants from the air — usually begins with a [NASA study](#) conducted in the 1980s. Researchers then were looking for ways to improve the air quality in a sealed spacecraft, and they concluded that the roots and soil of houseplants reduced airborne volatile organic compounds (VOCs) significantly. Since those early studies, researchers have both [confirmed](#) those findings and called them into question. Recent findings suggest that you'd have to shelter a large number of plants to equal the air purifying efficiency of modern biofilters and other technologies.

If you do decide to purchase houseplants to freshen the air naturally, these are several of the species [shown](#) to be most effective:

### Choose indoor plant varieties that are safe for pets and children

It's nearly impossible to find a complete list of toxic plants because some plants have parts that are poisonous and other parts that are perfectly safe. Before you bring a new plant home where kids or pets could get hold of it, check a reliable source to be sure it's safe. Your state extension service and poison control office may publish a list of toxic plants in your region. The [ASPCA](#) and [National Poison Control](#) center also offer resources. *Here's a brief sampling of common plants that pose a danger to children and animals:*

- amaryllis
- aloe vera
- azalea
- chrysanthemums
- cyclamen
- dieffenbachia
- English ivy
- jade
- jonquils
- lilies of many varieties
- mistletoe
- monstera deliciosa
- philodendron
- poinsettias
- pothos
- sago palm
- umbrella plant

*This isn't a comprehensive list. If you have children or pets, double check before bringing a new plant variety into your home.*

Having plants in your home or office (or your home office) confers a lot of benefits, but there are some risks involved, too. Keep these in mind as you decide if you want an indoor garden.

#### ✓ Be alert for pest infestations

Houseplants can operate like a Trojan horse for insects, molds, and other pests. If you're repotting a plant, it's not a good idea to use soil from your garden to do so. As you're selecting plants, pay attention to the watering needs of each species, because overwatering can create ideal conditions for mold growth and fungus gnats. Be sure to check leaves for pest signs (eggs, webbing, holes) so you can nip an infestation in the bud.

#### ✓ Can houseplants trigger allergies or asthma?

If your allergies or asthma symptoms are worsened by pollen, you might be relieved to learn that most common houseplants don't produce much pollen. If your symptoms are triggered by dampness, mold, or fungi, you may need to pay careful attention to the soil moisture in your plant pots. If you notice asthma symptoms after bringing plants into your home, it's a good idea to remove them until you can talk to a healthcare provider about your symptoms.

#### The bottom line

Indoor gardening relieves stress, boosts creativity, productivity, and focus, and promotes recovery. There's some evidence that houseplants may positively influence the air quality in your home as well. Know which plants are toxic if you have children or pets in the home. If you have asthma or allergies, be alert to species that aggravate your symptoms. Sharing your living or working space with living, "breathing" plant life can make your environment a happier, healthier place to be.





## Biodiversity: Can We Set Aside a Third of our Planet for Nature?

<https://www.bbc.com/news/science-environment-63955526>

It's being called a 'last chance' for nature - 100 countries backing calls to protect 30% of the planet. The aim is to reach this goal by 2030 and conserve forests and other vital ecosystems in order to restore the natural world. The "30 x 30" target is the key ambition of the [UN biodiversity summit, COP 15](#), held in December 2022. *Biodiversity* refers to all living things, from polar bears to plankton, and the way they fit together to sustain life on Earth.



### What's wrong and how do we fix it?

Scientists have warned that with forests and grasslands being lost at unprecedented rates and oceans under pressure from pollution and over-fishing, [humans are pushing the Earth beyond safe limits](#). This includes increasing the risk of diseases, like SARs CoV-2, Ebola and HIV, spilling over from wild animals into human populations.

Under the proposed agreement, countries would sign up targets to expand protected areas, such as nature reserves. It draws inspiration from the so-called "father of biodiversity", the biologist Edward O Wilson, who called for half of Earth to be protected. But there is debate over how much land and sea to include, and some scientists fear the targets may be diluted.

Designating areas for nature in a way that is meaningful will be a challenge, but it is absolutely required, says Prof. Mark Emmerson of Queens University, Belfast. "Protecting our land and seas also allows degraded ecosystems to recover, to start functioning in a way that is beneficial to society," he says. Maintaining and restoring healthy wetlands and forests - that lock away greenhouse gas emissions - can help humanity deal with the other major global challenge of climate change.

"Healthy ecosystems can lock up carbon and contribute to our climate mitigation targets if we give them the space to do so - in this respect the climate and biodiversity crises are flip sides of the same coin." Speaking to the BBC at the biodiversity conference, head of the UN Environment Program Inger Andersen also stressed that the biodiversity agreement "deals explicitly with nature's contribution to the impacts of climate change".



### Listening to 'those who protect the land'

Protecting the rights of indigenous peoples was front and center at the talks. Canadian Prime Minister Justin Trudeau was drowned out by a protest by a group of young indigenous people

during his opening speech. Thousands took to the streets to call for indigenous voices to be heard. They occupy some of the most biodiverse areas of the planet - places that it is particularly vital to protect such as the Amazon rainforest. But they fear they are being left out of decisions over what to protect and could even be thrown off their ancestral lands in the name of conservation.

Ayisha Siddiq, from the Global Youth Biodiversity Network, summed up some of the concerns of many communities when she addressed the media at COP15 saying: "You cannot omit the rights of indigenous communities - of those who protect the land - from the environment."



According to the UN, at least a quarter of the world's land is inhabited or managed by indigenous communities and, where those communities have land rights, there is often a measurable positive impact on nature [according to scientific studies](#). In Australia, Brazil and Canada, for instance, [more wildlife exists on lands cared for by indigenous communities](#).

Milka Chepkorir, human rights activist and member of the Sengwer Indigenous Peoples of Cherang'any Hills in Kenya, says the most biodiverse areas of the world are "where people live", not where there are "guards in uniforms with guns". "Indigenous people know the value of this biodiversity and live in harmony with it," she told BBC News.



### Which third do you protect?

Another point of contention is how to divide up the globe. Should every country agree to protect 30% of its territory or should this be a global target, focusing on protecting the most precious biodiversity? According to the conservation group, WWF, countries are veering towards the latter. The general sense at the negotiations is that there should be a global target to ensure we conserve the most important places, says Lucia Ruiz Bustos of WWF Mexico. But these protected areas must be effectively managed. In other words, it's not just about how much of the land and sea is protected but what is allowed to happen in these areas.

### Conservation must include restoration

In many cases, setting aside land without active restoration [does little for wildlife](#). In England, the government says it is protecting about 28% of land for nature. But, the figure is closer to 5%, [according to one report](#). And, while 38% of seas around the British Isles are

designated marine reserves, many are still subject to damaging fishing practices such as bottom trawling, where fishing gear is dragged along the sea bed.

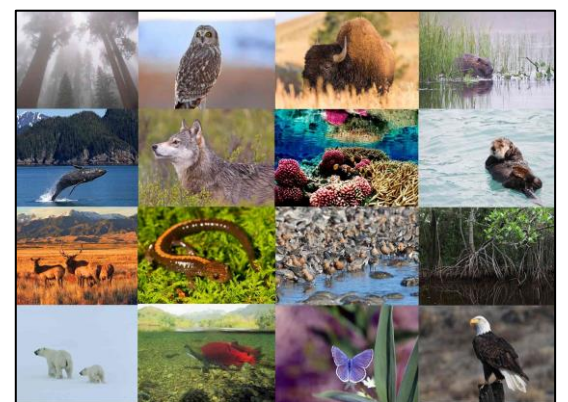
### Don't forget oceans

Analysis by the group suggests a bylaw recently introduced to ban bottom-towed fishing in Dogger Bank - a big sandbank in the North Sea - is showing signs of success with a "huge reduction in seabed fishing" within the protected area. "If we're to achieve 30% of land and sea protected by 2030, our ocean cannot be forgotten," says CEO of the Marine Conservation Society, Sandy Luk. "When our ocean is protected, habitats can recover and support the incredible biodiversity of life in our seas."



### Who pays to protect a third of our planet?

There are also questions over who foots the bill for restoring nature, with suggestions richer countries that have lost much of their wildlife should be paying poorer countries with intact forests and wild areas to do conservation work. The issue of how finance flows to poorer countries is a big unresolved issue. And while agreement on protecting 30% of land and sea would be regarded as a milestone, scientists warn that this alone would not be enough to stem biodiversity loss.



For more about biodiversity and how it relates to humans, visit:

- <https://www.theguardian.com/news/2018/mar/12/what-is-biodiversity-and-why-does-it-matter-to-us>
- <https://www.theguardian.com/environment/2022/dec/06/the-biodiversity-crisis-in-numbers-a-visual-guide-aoe>
- [https://www.nps.gov/articles/parkscienc-ev31-n1\\_butke\\_et-al-hm.htm](https://www.nps.gov/articles/parkscienc-ev31-n1_butke_et-al-hm.htm)
- <https://www.neefusa.org/health/why-biodiversity-important-human-health>
- <https://www.who.int/news-room/fact-sheets/detail/biodiversity-and-health>





FEBRUARY | 2023

OUTDOOR ALMANAC

**1**  
On very cold, clear days, see steam rising from a beaver lodge, as inside the lodge is significantly warmer than the outside. Beavers make their lodges weatherproof by covering them with mud—except for the very center, which allows fresh-air circulation inside.

**2**  
**Groundhog Day.** This marks the halfway point between the winter solstice and the vernal equinox. According to tradition, if Ms. G, the official state groundhog of Massachusetts, fails to see her shadow, the wintry weather will soon subside. Should a day of sunshine reveal the groundhog's shadow, the forecast is six more weeks of cold, inclement conditions.

**5**  
**Full Moon**

**6**  
Look for Hooded Mergansers on any open bodies of water. The narrow beaks, striking white-and-black hoods on the males, and cinnamon mohawks on the females make these beautiful ducks easy to pick out.

**9**  
Traditionally maple sugaring season began in mid-late February, given the proper weather conditions of alternating sequence of short warming trends and cold spells that produces strong sap flow. With climate change, our season generally starts earlier. Watch for little icicles at the tips of sugar maple twigs that signal flow has started.

**10**  
Red Fox vixens scout and clean out several potential dens to choose from once it's time to give birth. Look for piles of freshly excavated soil on top of the snow on gentle, edge habitat hillsides.

**12**  
**Great Horned Owls** lay 1-4 eggs, often in nests that were built and abandoned by other species, like Red-tailed Hawks, crows, herons, and squirrels.

**15**  
**Hairy and Downy woodpeckers** drum year-round, but the frequency picks up as they set up territories. Hairy Woodpeckers drum very fast with long pauses—at least 25 taps/second; 20 seconds between—while Downy Woodpeckers drum more slowly with shorter pauses—15 taps/second; a few seconds between.

**17**  
**Red-winged Blackbirds** are returning. The males come back first to display their red epaulets and sing their konk-a-ree songs as they establish territories before the females arrive.

**20**  
Look for coyote and deer beds in the snow. Coyotes usually bed in a hollow under evergreen trees or rocky overhangs where they are well protected. Deer also bed under trees, but usually pick a protected area where they can also have good views of their surroundings to watch for predators.

**24**  
**Chickadees** have started their territorial singing. Usually described as fee-bee, a more descriptive mnemonic is they are declaring my-tree!

**27**  
**Killdeer** arrive as early as late February in exceptionally warm years. Listen for their kill-deer, kill-deer call in fields and pastures, or on playgrounds, lawns, unpaved driveways, or beach dunes.



massaudubon.org

WINTER ACTIVITY BINGO

Bundle up! Go for a walk	Too cold out? Challenge your family to a time challenge!	Lace-up your skates and glide across a local rink	Play your favourite family board game!
Bake some cookies! Look for a healthier recipe	Is it snowing yet? Build a snow-family!	Play Tic-Tac-SNOW	Make faces on trees with snow!
Too cold out? Make an indoor obstacle course!	Make some snow angels	FREE SPACE	Play a game of snow soccer or snowball catch!
Art day! Paint, draw, or make a collage	Prepare a healthy, warming meal	Go tobogganing! (Don't forget a hot drink!)	Go for a night walk! Let the snow light the way

Mass Audubon  
WINTER BINGO

sound of wind	acorn	flying bird	evergreen trees	scat
flock of birds	signs of a woodpecker	winter flower	perching bird	berries
bird call	rock wall	Free Space	pine cone	soaring bird
y-shaped twig	squirrel	oak leaf	tree with yellow leaves	old nest
trail marker	animal tunnel or hole	animal tracks	multi-colored rock	snow